

On Second-Hand RF Radiation**By: Robert C. Kane, Ph.D.****Former Motorola Senior Research Scientist and Technical Staff Member****July 12, 2002**

Radiofrequency radiation emissions from cellular towers and handsets hold the potential for increased incidence of long-term medical effects, but of equal importance are the immediate effects of exposure to the radiation.

Unlike second-hand cigarette or cigar smoke, exposure to which has been linked to life threatening and debilitating diseases, radiofrequency radiation exposure has, to date, successfully avoided the issue of passive personal exposure. It is extraordinary that absorption of unwanted radiation is never cited as an objectionable byproduct of the wireless communication craze. The reason may be that radiofrequency radiation, being tasteless, odorless and invisible, just isn't considered. But, in fact, recent research has demonstrated that even short-term exposure to radiation power densities emanating from a nearby cellular telephone is sufficient to modify brainwave patterns, affect short-term memory, and modify an individual's ability to perform physical tasks such as driving an automobile. These effects are all well and good for those who are willing to accept the risk of modified brain functions and cancer but they are not well and good for the innocent victim of the insidious radiation - radiation that an innocent non-participant cannot even be aware is being deposited into his or her body.

Radiation emanating from a portable cellular telephone does not discriminate. It propagates through the entire environment surrounding the radiating antenna of the phone. Many people, perhaps most people, have the impression that the radiation goes only to the cellular tower receiving station. That's the cartoonish illusion passed on by the manufacturers and service providers, but the reality of the situation is that every time someone in an automobile next to you activates his cellular phone or whenever someone at a nearby table in a restaurant at which you are having lunch activates her phone your brain is being radiated. So, along with their own increased risk of memory deficits, automobile accidents, and brain cancer, the cellular phone users also include everyone nearby by bringing each into the high- risk pool.

Prior to the 1980s human exposure to radiofrequency radiating sources was pretty much restricted to the occasional passing police car, commercial mobile radio, or the ultra low-level RF energies emitted by the sun and a sparse array of remotely located television and radio broadcast antennae. However, today it is virtually impossible to venture into a public place without being battered by unwanted radiofrequency radiations from a variety of sources, the most objectionable of which must be the personal portable cellular telephone. Without assuming any responsibility for their actions or assuming any liability for the effects, portable cellular telephone users are presently allowed to radiate nearby persons without fear of consequence, as there are no consequences, even while those unwillingly or unwittingly radiated have no recourse to remedy the unwanted exposures.

Such was the case with tobacco smoke until only recently. The issue of second-hand tobacco smoke might have been resolved many years ago if adequate research had been performed to support the complaints of objecting parties. In the instance of radiofrequency radiation the research has already been completed. The body of available research indicates that operation of a nearby portable cellular telephone will expose a non-user to radiation, some of which will be deposited into the brain of the non-user, at levels higher than necessary to elicit undesirable biological effects even though the phone may be more than ten feet away from the non-user.

To put the radiation exposure into perspective let's consider that a person standing ten feet away from a portable cellular phone user can be exposed to radiation levels of more than 1×10^{-3} mW/cm² while the human body in the natural environment is exposed to about 1×10^{-15} mW/cm² of radiofrequency radiation at the same frequency as the cellular phone. Expressed in everyday numbers this becomes: for the cellular phone radiation, 0.001 mW per square centimeter of the bystander's body, whereas for the bystander's normal environment the radiation level is only 0.000000000000001 mW per square centimeter.

In many instances a person may be legally exposed, contrary to her own wishes, to radiofrequency radiation by a phone user standing or sitting immediately next to herself - perhaps as little as one foot away. It's difficult enough to limit one's hazardous environmental exposures to avoid substances which can be detected, but to have no way of protecting one's self from a hazard that penetrates to the depths of the human brain violates the most fundamental principles of our social system. Know, then, that whenever someone makes a cellular telephone call he or she doesn't just radiate their own brain they radiate everyone's brain.

Know, also, that after that cellular phone user leaves the scene he leaves behind, within the brain of each and every nearby person, the residual effects and damage. These are effects and damage known to the scientific community but not acknowledged by the industry placing their products into the commercial stream.

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